

September 13, 2016

RE: OPOSITION TO RM-11708

Dear FCC:

In NPRM 11708 / WT 16-239, the ARRL and FCC want to encourage experimentation and expansion of data, while updating Part 97 rules to remove an antiquated baud rate limit. This is commendable, but must be done in a manner that ensures future technical innovation does not overrun current enjoyment and ignore fundamental technical issues, such as the need to avoid co-mingling of inharmonious emission types in the very limited HF spectrum.

If the 300 baud limitation is eliminated, it will be eliminating a de facto emission bandwidth for RTTY and other data signals that has been in place to ensure order an approximate 500 Hz bandwidth on practical signaling. If the 300 baud limit is removed, it is incumbent upon the FCC to, at the same time, institute an RF bandwidth emission limit that protects current and future narrow band Data and RTTY transmissions and narrowband experimentation which currently occurs in the lowest 100 kHz of each HF and MF band. The vast number of RTTY amateurs and JT65 experimenters use published codes that result in maximum data rate within an emitted bandwidth of less than 500 Hz, and the fastest of CW and PSK 31 and other narrow band emissions result in an emission bandwidth of less than 200 Hz. Without a regulated narrow band emission bandwidth, in the absence of a regulated baud rate, it will be a purely subjective decision as to how much bandwidth is the minimum amount needed to communicate. Chaos would ensue and enforcement would be impossible, as its one person's view of "minimum bandwidth" against another's. The existing baud rate assures a practical bandwidth limit today.

If the FCC wishes to eliminate the limitation on baud rate and provide a home for new wideband data with unlimited bandwidth, the Commission must at the same time provide an emission bandwidth limit of less than 500 Hz for the lowest 100 kHz of each band where today's RTTY and JT65 and other narrow band emissions operate, and should further institute an emission limit of less than 200 Hz in the lowest 50 kHz of

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each HF/MF sub band where US and global CW / morse code, and PSK 31 activity may occur. This emission regulation is less than the 2.8 kHz asked for by the ARRL, and is needed because of the vast number of US and global amateurs currently operating and experimenting in the lowest 100 kHz using very narrowband emissions. A regulation by bandwidth in the lowest 100 kHz is required in the absence of a 300 baud limit because of the real threat of interference and lack of self policing that would occur without such narrow band emission limits.

Today, there are gray areas associated with what is an allowable code or what is a published code in Pactor, and there are loopholes in the FCC rules, which are unenforceable by the voluntary official observers , when other documented codes that are not widely detected by existing hams are used.

It is important to note that many digital modes are encrypted, which means they cannot be monitored, and they may therefore constitute a valid threat to national security. The FCC rules do not clearly state how a human may identify such encrypted transmissions, meaning that the self policing nature of the hobby will be severely compromised if NPRM 11708 / WT 16-239 is passed.

There are also gray areas about when a control operator exists or not for automated data transmitters, and future technology could further cloud the compliance issues as the data emissions are widened and adopted by more amateurs. Many commenters have given proof to the Commission about the inability to decode certain existing Pactor 3 transmissions, and confusion and interference would be propagated terribly with new data entrants without emission bandwidth limits that assure protection of the narrowest of bandwidth emissions.

All three ITU regions and Japan already institute narrow band regulations (200 Hz and 500 Hz) or recommendations in the lowest 100 kHz of each HF band because of the major disruption and chaos that results when wideband data is mixed with narrowband data. This stems from the technical realities that narrowband signals are not useable in the face of wider band data transmissions. For these reasons, in response to the

Commissions request in Paragraphs 9-12, I urge the Commission to rule for eliminating the baud rate, and at the same time establish a maximum emission bandwidth limit of 200 Hz in the lowest 50 kHz of every MF/HF Band, and a 500 Hz maximum emission bandwidth limit from 50 to 100 kHz above the lowest part of every MF/HF band edge. The new, inharmonious, unlimited wide band data proposed by the FCC and ARRL could operate (and keep all of its emissions) above 100 kHz above the lowest band edge in each MF / HF band edge, thereby supporting the new types of modes requested by the ARRL, while also preserving existing and future narrow band data transmissions and the massive investments already made by the amateur community for these narrow band transmissions. This solution will satisfy the US and global amateur population, will comply with ITU recommendations, while providing new wide band data capabilities, and while honoring and supporting narrow band CW, RTTY, and other narrow band modes that are critical for emergency and long distance human communication.

The HF spectrum for the amateur service is severely limited. The FCC has never allowed 2.8 kHz SSB signals into the data/RTTY HF/MF sub bands. The FCC must view unlimited bandwidth data signals as an inharmonious emission for today's narrowband emissions, just like SSB is, and must protect the narrow band transmissions at the lowest end of HF/MF. Otherwise, the removal of baud rate will immediately allow wider band data that will be unregulated, subjectively determined, undetectable without a CW identification, and will overrun the existing CW, RTTY, and narrow band experimentation over time.

Sincerely

